



## ■ Features :

- Economical open frame design
- Wide input range
- High efficiency up to 96%
- Remote ON / OFF control
- Compact size 2.0"x0.512"x 0.433"(SIP package)
- Protections: Short circuit / Overload / Over voltage
- -30~+85°C wide working temperature
- Cooling by free air convection
- Comply to EN55032 ClassA without additional components
- Trimming output (optional)
- 3 years warranty

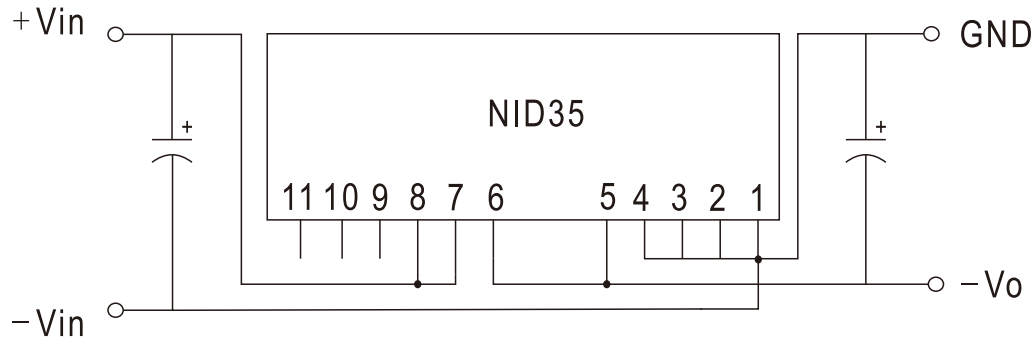


## SPECIFICATION

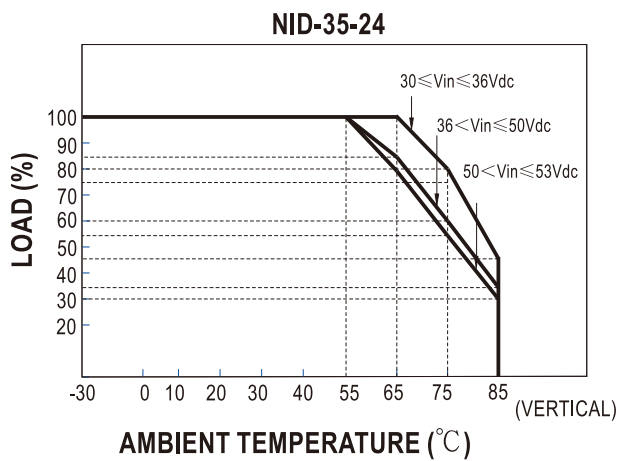
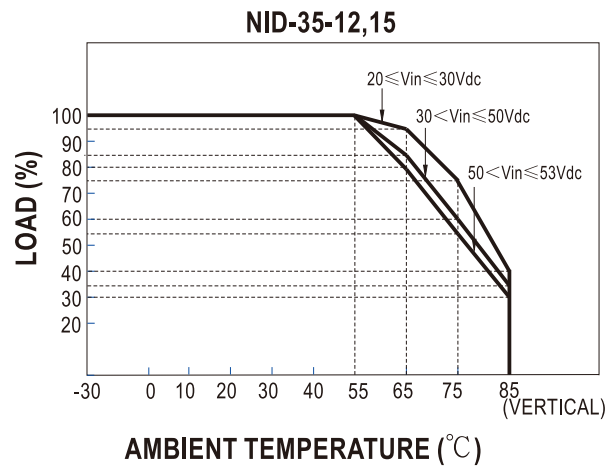
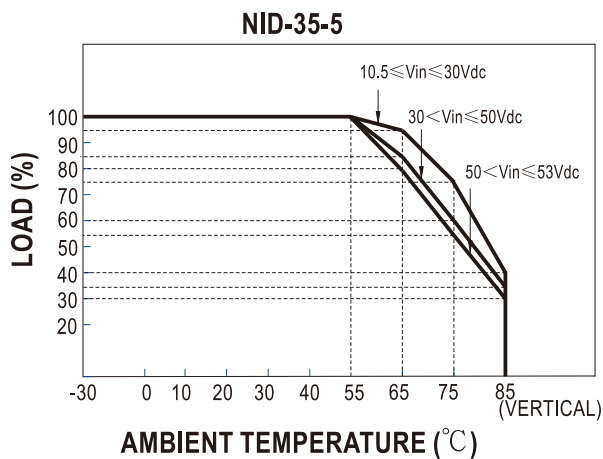
| ORDER NO.     |                                                                                                                                                                                                                                                                                                                                          |           | NID35-5                                                                                                                  |  | NID35-12                 |  | NID35-15                                                             |  | NID35-24         |  |  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------|--|--------------------------|--|----------------------------------------------------------------------|--|------------------|--|--|
| OUTPUT        | DC VOLTAGE                                                                                                                                                                                                                                                                                                                               |           | 5V                                                                                                                       |  | 12V                      |  | 15V                                                                  |  | 24V              |  |  |
|               | CURRENT RANGE                                                                                                                                                                                                                                                                                                                            |           | 0 ~ 3.5A                                                                                                                 |  | 0 ~ 2.9A                 |  | 0 ~ 2.4A                                                             |  | 0 ~ 1.5A         |  |  |
|               | RATED POWER                                                                                                                                                                                                                                                                                                                              |           | 17.5W                                                                                                                    |  | 34.8W                    |  | 36W                                                                  |  | 36W              |  |  |
|               | RIPPLE & NOISE (max.) Note.2                                                                                                                                                                                                                                                                                                             |           | 100mVp-p                                                                                                                 |  | 120mVp-p                 |  | 150mVp-p                                                             |  | 200mVp-p         |  |  |
|               | LINE REGULATION                                                                                                                                                                                                                                                                                                                          | Note.3    | ±0.5%                                                                                                                    |  | ±0.5%                    |  | ±0.5%                                                                |  | ±0.5%            |  |  |
|               | LOAD REGULATION                                                                                                                                                                                                                                                                                                                          | Note.4    | ±0.5%                                                                                                                    |  | ±0.5%                    |  | ±0.5%                                                                |  | ±0.5%            |  |  |
|               | VOLTAGE TOLERANCE                                                                                                                                                                                                                                                                                                                        |           | ±2.0%                                                                                                                    |  | ±2.0%                    |  | ±2.0%                                                                |  | ±2.0%            |  |  |
|               | SWITCHING FREQUENCY (Typ.)                                                                                                                                                                                                                                                                                                               |           | 200KHz                                                                                                                   |  |                          |  |                                                                      |  |                  |  |  |
|               | EXTERNAL CAPACITANCE LOAD (max.)                                                                                                                                                                                                                                                                                                         |           | 100uF / 16V low ESR                                                                                                      |  | 68uf/25V low ESR         |  | 47uf/50V low ESR                                                     |  | 47uf/50V low ESR |  |  |
| INPUT         | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                            |           | 10.5 ~ 53VDC                                                                                                             |  | 20 ~ 53VDC               |  | 20 ~ 53VDC                                                           |  | 30 ~ 53VDC       |  |  |
|               | NORMAL VOLTAGE                                                                                                                                                                                                                                                                                                                           |           | 24VDC (or 12VDC or 48VDC)                                                                                                |  | 24VDC (or 48VDC)         |  | 24VDC (or 48VDC)                                                     |  | 48VDC            |  |  |
|               | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                        | 24Vin     | 93% (12/24VDC)                                                                                                           |  | 95%                      |  | 96%                                                                  |  | -----            |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          | 48Vin     | 89%                                                                                                                      |  | 93%                      |  | 94%                                                                  |  | 95%              |  |  |
|               | DC CURRENT                                                                                                                                                                                                                                                                                                                               | Full load | 1700mA/12VDC                                                                                                             |  | 1580mA/24VDC             |  | 1620mA/24VDC                                                         |  | 840mA/48VDC      |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          | No load   | 30mA                                                                                                                     |  | 30mA                     |  | 30mA                                                                 |  | 50mA             |  |  |
| PROTECTION    |                                                                                                                                                                                                                                                                                                                                          |           | Fuse recommended (3A)                                                                                                    |  |                          |  |                                                                      |  |                  |  |  |
| PROTECTION    | OVERLOAD (Typ.)                                                                                                                                                                                                                                                                                                                          |           | 120 ~ 250% rated output power                                                                                            |  |                          |  |                                                                      |  |                  |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | Protection type : Hiccup mode, recovers automatically after fault condition is removed                                   |  |                          |  |                                                                      |  |                  |  |  |
|               | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                             |           | 6.4 ~ 7.5V                                                                                                               |  | 15.6~ 18V                |  | 17.5~ 21V                                                            |  | 28~ 33V          |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | Protection type : Shut off o/p voltage, clamp by TVS diode                                                               |  |                          |  |                                                                      |  |                  |  |  |
| SHORT CIRCUIT |                                                                                                                                                                                                                                                                                                                                          |           | All output equipped with short circuit                                                                                   |  |                          |  |                                                                      |  |                  |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | Protection type : Hiccup mode, recovers automatically after fault condition is removed                                   |  |                          |  |                                                                      |  |                  |  |  |
| FUNCTION      | REMOTE CONTROL                                                                                                                                                                                                                                                                                                                           |           | Power on : 1.2VDC < R.C ~ com < 12VDC or open circuit ; power off : R.C ~ com < 0.4VDC or short circuit (PIN5,6 & PIN11) |  |                          |  |                                                                      |  |                  |  |  |
| ENVIRONMENT   | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                         |           | EAC TP TC 004 approved                                                                                                   |  |                          |  |                                                                      |  |                  |  |  |
|               | WORKING TEMP.                                                                                                                                                                                                                                                                                                                            |           | -30 ~ +85℃ (Refer to "Derating Curve")                                                                                   |  |                          |  |                                                                      |  |                  |  |  |
|               | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                         |           | 20% ~ 85% RH non-condensing                                                                                              |  |                          |  |                                                                      |  |                  |  |  |
|               | STORAGE TEMP.                                                                                                                                                                                                                                                                                                                            |           | -30 ~ +105℃                                                                                                              |  |                          |  |                                                                      |  |                  |  |  |
|               | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                        |           | ±0.03% / °C (0 ~ 55℃)                                                                                                    |  |                          |  |                                                                      |  |                  |  |  |
|               | VIBRATION                                                                                                                                                                                                                                                                                                                                |           | 10 ~ 500Hz, 2G 10min./1 cycle, period for 60min. each along X, Y, Z axes                                                 |  |                          |  |                                                                      |  |                  |  |  |
| SAFETY & EMC  | SAFETY STANDARD                                                                                                                                                                                                                                                                                                                          |           | EN62368-1(LVD)                                                                                                           |  |                          |  |                                                                      |  |                  |  |  |
|               | EMC EMISSION                                                                                                                                                                                                                                                                                                                             |           | Parameter                                                                                                                |  | Standard                 |  | Test Level / Note                                                    |  |                  |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | Conducted                                                                                                                |  | EN55032                  |  | Class A without external components,Class B with external components |  |                  |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | Radiated                                                                                                                 |  | EN55032                  |  | Class A without external components,Class B with external components |  |                  |  |  |
|               | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                             |           | Parameter                                                                                                                |  | Standard                 |  | Test Level / Note                                                    |  |                  |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | Radiated                                                                                                                 |  | EN61000-4-3              |  | Level 2, 3V/m ; criteria A                                           |  |                  |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | EFT / Burst                                                                                                              |  | EN61000-4-4              |  | Level 2, 1KV ; criteria A                                            |  |                  |  |  |
|               |                                                                                                                                                                                                                                                                                                                                          |           | Surge                                                                                                                    |  | EN61000-4-5              |  | Level 2, 1KV/Line-Line,criteria A                                    |  |                  |  |  |
| Conducted     |                                                                                                                                                                                                                                                                                                                                          |           | EN61000-4-6                                                                                                              |  | Level 2, 3V ; criteria A |  |                                                                      |  |                  |  |  |
| OTHERS        | DIMENSION                                                                                                                                                                                                                                                                                                                                |           | 50.8*13*11mm or 2.0**0.512**0.433" inch (L*W*H)                                                                          |  |                          |  |                                                                      |  |                  |  |  |
|               | WEIGHT                                                                                                                                                                                                                                                                                                                                   |           | 9g;440psc/4.96Kg/0.97CUFT                                                                                                |  |                          |  |                                                                      |  |                  |  |  |
| NOTE          | 1.All parameters are specified at normal input, rated load, 25℃ 70% RH Ambient.<br>2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf & 47uf capacitor.<br>3.Line regulation is measured from low line to high line at rated load.<br>4.Load regulation is measured from 10% to 100% rated load. |           |                                                                                                                          |  |                          |  |                                                                      |  |                  |  |  |

## ■ Connection diagram to obtain negative output voltage

Note: input voltage must be  $< 30\text{VDC}$ .

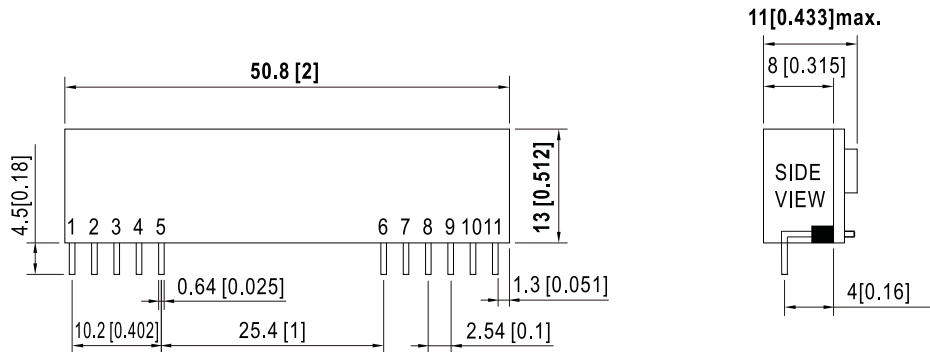


## ■ Derating Curve



## Mechanical Specification

Unit:mm(inch)

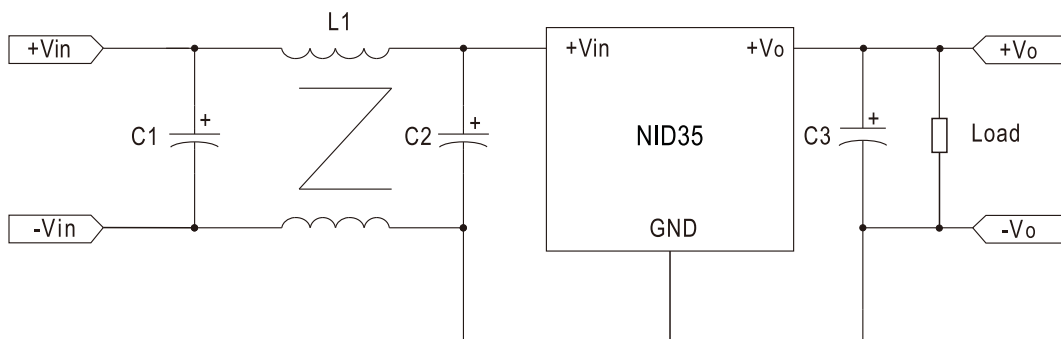


## Pin Configuration

| Pin No. | Pin_Out        |
|---------|----------------|
| 1,2,3,4 | +Vout          |
| 5,6     | Com            |
| 7,8     | +Vin           |
| 9       | N.C.           |
| 10      | Trim(optional) |
| 11      | R.C.           |

## EMC Suggestion Circuit

※Comply to EN55032 Class A without additional componenets ,required external componenets to meet Class B emissison are as below:



| C1/C2           | L1               | C3             |
|-----------------|------------------|----------------|
| 120 $\mu$ F/63V | 15 $\mu$ H(NiZn) | 22 $\mu$ F/35V |